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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,623	01/17/2002	Robert W. Bower	BOW5075.10A	1021

7590 12/10/2002  
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EXAMINER

PERT, EVAN T

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/033,729

Applicant(s)

BOWER, ROBERT W.

Examiner

Evan T. Pert

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 49-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 49-74, 76 and 79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant's claims 49-82 are structured as "product-by-process" claims wherein the structural "process" limitations are given limited weight for defining the structure of the product [See MPEP 2113 for a complete discussion of the proper examination and treatment of product-by-process claims].

In the instant case, as relating to claims 49-74, applicant's disclosure is directed at improved methodology for making "a layer of material for use in microcircuits", but the claims do not define any resolvable *structure* of such a layer made by such improved methodology.

Likewise, as relating to claims 76 and 79, applicant's claim language does not resolve any structurally distinguishable feature of the base material except that the intermediately processed base material "has hydrogen" wherein the hydrogen is near "acceptor centers" that define a "contour line."

For purposes of examination, the claimed "layer of material" for use in fabrication of microcircuits, as claimed in claims 49-74, is resolvable only to "a thin layer of material that could be used for fabrication of microcircuits".

For purposes of examination, the base material, as claimed in claims 76 and 79, simply has acceptor centers and atoms such as hydrogen, since the transporting and introducing do not define structure that can be examined [See MPEP 2113].

Spaced Apart?

Finally, the meaning of “at a location spaced apart” in claims 49-74, 76 and 79 is a relative term of degree, leaving one of ordinary skill wondering “how far apart is not spaced apart”? and/or “how can atoms not be introduced spaced apart?”, since atoms must necessarily travel, and cannot realistically be transported instantaneously. For example, the act of injecting an atom to a depth d will necessarily inherently require the atom to travel from a location “spaced apart” (at the surface), inherently.

Regardless of any reasoning for what “spaced apart” means in atomic distance, the “spaced apart” limitation is unclear as to an effect on the structure of the claimed “layer” or “base material” since the “spaced apart” limitation seemingly does not resolve any structure as used in the claims.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

- A person shall be entitled to a patent unless –
- (e) the invention was described in —
    - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
    - (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 49-82 are rejected under 35 U.S.C. 102(e) as being anticipated by Henley et al. (U.S. Patent 6,162,705).

In view of the rejections under 35 USC 112 for lack of definiteness, as explained above, applicant's "product" structures, as claimed, are indistinguishable from the structures explicitly and implicitly disclosed by Henley et al.:

The only significant difference between the methodology taught by Henley et al. and applicant is the act of "transporting hydrogen atoms *from locations spaced apart* from the boron acceptor centers", but the effect on the final product structure is unclear.

In view of the lack of "product-by-process" clarity defining applicant's structure, Henley et al. anticipates the structure of applicant's products *as claimed*.

For example, a layer comparable to applicant's claimed "layer of material" (but not yet "expunged") is delineated as "12" in the cover figure to Henley et al., with boron acceptor centers defining a planar contour line at a distance  $Z_0$  from the surface, and the transporting of hydrogen atoms to the boron sites which are used to cleave the contour line. Applicant's claimed "base material" can be seen in the cover figure to Henley et al. as having a thickness delineated by "18".

#### **Conclusion**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan T. Pert whose telephone number is 703-306-5689. The examiner can normally be reached on M-F (7:00-3:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 703-308-1233. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ETP  
December 6, 2002

  
**EVAN PERT**